

CLAIMS

What is claimed is:

1. A method of providing access to a remotely stored file comprising:
displaying in a file sharing window on a local computer a representation of a file stored on a remote computer;
copying the file from the remote computer to the local computer to create a copied file when a user attempts to open the file from the file sharing window; and
changing the representation of the file in the file sharing window into an alias of the copied file to allow the copied file to be directly opened from the local computer via the alias in the file sharing window.
2. The method of claim 1 further comprising:
opening the copied file on the local computer when the user acts upon the alias.
3. The method of claim 1 wherein the copying comprises:
detecting the user attempting to open the file;
initiating copying of the file from the remote computer to the local computer; and
displaying a status indicator as the file is copied from the remote computer to the local computer.
4. A storage device having instructions which when executed by a processor cause the processor to perform operations comprising:
displaying in a file sharing window on a local computer a representation of a file stored on a remote computer;
copying the file from the remote computer to the local computer to create a copied file when a user attempts to open the file from the file sharing window; and
changing the representation of the file in the file sharing window into an alias of the copied file to allow the copied file to be directly opened from the local computer via the alias in the file sharing window.

5. The storage device of claim 4 wherein the instructions cause the processor to perform further operations comprising:
 - opening the copied file on the local computer when the user acts upon the alias.
6. The storage device of claim 4 wherein the copying comprises:
 - detecting the user attempting to open the file;
 - initiating copying of the file from the remote computer to the local computer; and
 - displaying a status indicator as the file is copied from the remote computer to the local computer.
7. A computer system comprising:
 - a teleconferencing application having a teleconferencing window to display video images received from a remote computer via a teleconferencing communications link; and
 - an accessory application having an accessory window, the accessory application to execute separately from the teleconferencing application, to provide at least one accessory function to the teleconferencing application by handling data transmitted to or from the teleconferencing application, and to display information descriptive of the handled data in the accessory window.
8. The computer system of claim 7, wherein the accessory application is a file sharing accessory adapted to display in the accessory window a file selected by the user to be shared, and to transmit information regarding the file to the remote computer to allow a user of the remote computer to see the file in, and copy the file from, a remote accessory window of a remote accessory application executing on the remote computer.
9. The computer system of claim 8, wherein the accessory application is configured to update the accessory window to include an indication of a status of remote user access to the file.
10. A user interface of a computer system comprising:
 - a teleconferencing window generated by a teleconferencing application

to display video images received from a remote computer via a teleconferencing communications link; and

an accessory window generated by an accessory application, the accessory application to execute separately from the teleconferencing application and to provide at least one accessory function to the teleconferencing application by handling data transmitted to or from the teleconferencing application, the accessory window to display information descriptive of the handled data.

11. The user interface of claim 10, wherein the accessory application is a file sharing accessory adapted to

display in the accessory window a file selected by the user to be shared, and

transmit information regarding the file to the remote computer to allow a user of the remote computer to see the file in, and copy the file from, a remote accessory window of a remote accessory application executing on the remote computer.

12. The user interface of claim 11, wherein the accessory window includes an indication of a status of remote user access to the file.

13. A method of providing a status of a file shared via a file sharing window of a teleconferencing application comprising:

displaying a file sharing window of a teleconferencing application;

displaying in the file sharing window a representation of a shared file and an indication of a number of users of a plurality of remote computers who have copied the shared file; and

updating the indication of the number of users who have copied the shared file responsive to the shared file being copied to one of the remote computers.

14. The method of claim 13, further comprising:

updating the indication of the number of users who have copied the shared file responsive to the shared file being deleted from one of the remote computers.

15. A storage device having instructions which when executed by a processor cause the processor to perform operations to provide a status of a file shared via a file sharing window of a teleconferencing application comprising:
- displaying a file sharing window of a teleconferencing application;
 - displaying in the file sharing window a representation of a shared file and an indication of a number of users of a plurality of remote computers who have copied the shared file; and
 - updating the indication of the number of users who have copied the shared file responsive to the shared file being copied to one of the remote computers.
16. The storage device of claim 15 wherein the instructions cause the processor to perform further operations comprising:
- updating the indication of the number of users who have copied the shared file responsive to the shared file being deleted from one of the remote computers.
17. A method of providing the status of a file shared via a file sharing window of a teleconferencing application comprising:
- displaying on each of a plurality of computers a file sharing window for a teleconferencing application, the file sharing window including a representation of a shared file posted by a first user of a first computer of one of the plurality of computers;
 - deleting the representation of the shared file from the file sharing window on each of the computers when the first user removes the representation of the shared file from the file sharing window on the first computer; and
 - deleting the representation of the shared file only from the file sharing window on a second computer of the plurality of computers when a second user, who did not post the shared file, removes the representation of the shared file from the file sharing window on the second computer.
18. A storage device having instructions which when executed by a processor cause the processor to perform operations to provide the status of a

file shared via a file sharing window of a teleconferencing application comprising:

- displaying on each of a plurality of computers a file sharing window for a teleconferencing application, the file sharing window including a representation of a shared file posted by a first user of a first computer of one of the plurality of computers;

- deleting the representation of the shared file from the file sharing window on each of the computers when the first user removes the representation of the shared file from the file sharing window on the first computer; and

- deleting the representation of the shared file only from the file sharing window on a second computer of the plurality of computers when a second user, who did not post the shared file, removes the representation of the shared file from the file sharing window on the second computer.

19. A method for mirroring events between a plurality of computers in a teleconference communicatively coupled via a teleconferencing application executing on each of the plurality of computers, the method comprising:

- detecting events in a first window on a first computer of the plurality of computers;

- converting the detected events into video streaming data;

- transmitting the video streaming data from the first computer to the teleconferencing applications on each of the plurality of computers other than the first computer; and

- displaying in a window on each of the plurality of computers other than the first computer the video streaming data representing the detected events from the first computer to allow users of the plurality of computers other than the first computer to observe in the window the detected events from the first window on the first computer.

20. A storage device having instructions which when executed by a processor cause the processor to perform operations to mirror events between a plurality of computers in a teleconference communicatively coupled via a

teleconferencing application executing on each of the plurality of computers, the method comprising:

- detecting events in a first window on a first computer of the plurality of computers;

- converting the detected events into video streaming data;

- transmitting the video streaming data from the first computer to the teleconferencing applications on each of the plurality of computers other than the first computer; and

- displaying in a window on each of the plurality of computers other than the first computer the video streaming data representing the detected events from the first computer to allow users of the plurality of computers other than the first computer to observe in the window the detected events from the first window on the first computer.

21. A software architecture for a teleconferencing application, comprising:
an application layer containing the teleconferencing application; and
a teleconferencing accessory stack layer containing at least one teleconferencing accessory, the teleconferencing accessory stack layer adapted to contain a plurality of teleconferencing accessories in an ordered stack, each of the teleconferencing accessories providing at least one accessory function for operating on data transmitted to or from the teleconferencing application, the accessory function not provided by the teleconferencing application.

22. The software architecture of claim 21, wherein each teleconferencing accessory exposes an application programming interface through which the teleconferencing application can access the accessory functions of the accessory.

23. The software architecture of claim 22, wherein each teleconferencing accessory is further adapted to receive application programming interface (API) calls via its application programming interface and either act upon the API calls or pass the API calls to a next teleconferencing accessory in the ordered stack, such that that the teleconferencing application makes API calls only to a first accessory in the ordered stack.

24. The software architecture of claim 21, wherein at least one teleconferencing accessory is a faceless accessory that does not have a user interface.
25. The software architecture of claim 24 wherein at least one faceless accessory is located at a bottom of the ordered stack.
26. The software architecture of claim 21, further comprising:
a conference component below the accessory stack layer, the conference component adapted to maintain bi-directional communications between teleconferencing applications on different computers.
27. The software architecture of claim 26, wherein the teleconferencing application initializes itself with the conference component by an application programming interface call passed through the teleconferencing accessories in the accessory stack layer, wherein each teleconferencing accessory adds its capabilities to the application programming interface call prior to passing the call to a next teleconferencing accessory in the ordered stack, such that the conference component receives the capabilities of all of the teleconferencing accessories in the accessory stack layer.
28. The software architecture of claim 27, wherein each teleconferencing accessory flags its capabilities to indicate at least a desirability.
29. The software architecture of claim 28, wherein the desirability is one of a group consisting of at least: optional, required, and desired.
30. The software architecture of claim 26, further comprising:
a transport component located below the conference component.
31. The software architecture of claim 30, further comprising:
a network component located below the transport component.
32. A system comprising:
a processor, a memory, and a storage device each coupled to a bus;
a teleconferencing application to execute at an application layer; and

at least two teleconferencing accessories arranged in an accessory stack layer adapted to contain a plurality of teleconferencing accessories in an ordered stack, each of the teleconferencing accessories providing at least one accessory function for operating on data transmitted to or from the teleconferencing application, the accessory function not provided by the teleconferencing application.

33. The system of claim 32, wherein each teleconferencing accessory exposes an application programming interface through which the teleconferencing application can access the accessory functions of the teleconferencing accessory.

34. The system of claim 33, wherein each teleconferencing accessory is further adapted to receive application programming interface (API) calls via its application programming interface and either act upon the API calls or pass the API calls to a next teleconferencing accessory in the ordered stack, such that that the teleconferencing application makes API calls only to a first teleconferencing accessory in the ordered stack.

35. The system of claim 32, wherein at least one teleconferencing accessory is a faceless accessory that does not have a user interface.

36. The system of claim 32 wherein the teleconferencing accessory located at a bottom of the ordered stack is a faceless accessory that does not have a user interface.

37. The system of claim 32, further comprising:
a conference component located below the accessory stack layer, the conference component adapted to maintain bi-directional communications between the teleconferencing application this system and at least one remote teleconferencing application on at least one remote system.

38. The system of claim 37, wherein the teleconferencing application initializes itself with the conference component by an application programming interface call passed through the teleconferencing accessories in the accessory stack layer, wherein each of the teleconferencing accessories adds

its capabilities to the application programming interface call prior to passing the call to a next teleconferencing accessory in the ordered stack, such that the conference component receives the capabilities of all of the teleconferencing accessories in the accessory stack layer.

39. The system of claim 38, wherein each teleconferencing accessory flags its capabilities to indicate at least its desirability.

40. The system of claim 39, wherein the desirability is one of a group consisting of: optional, required, and desired.

41. The system of claim 37, further comprising:
a transport component located below the conference component.

42. The system of claim 41, further comprising:
a network component located below the transport component.

43. A storage device having instructions which when executed by a processor cause the processor to perform operations comprising:
executing a teleconferencing application at an application layer; and
initializing a teleconferencing accessory stack layer containing at least one teleconferencing accessory, the teleconferencing accessory stack layer adapted to contain a plurality of accessories in an ordered stack, each of the accessories providing at least one accessory function for operating on data transmitted to or from the teleconferencing application, the accessory function not provided by the teleconferencing application.

44. The storage device of claim 43, wherein each teleconferencing accessory exposes an application programming interface through which the teleconferencing application can access the accessory functions of the teleconferencing accessory.

45. The storage device of claim 44, wherein each teleconferencing accessory is further adapted to receive application programming interface (API) calls via its application programming interface and either act upon the API calls or pass the API calls to a next teleconferencing accessory in the ordered stack, such that

that the teleconferencing application makes API calls only to a first teleconferencing accessory in the ordered stack.

46. The storage device of claim 43, wherein at least one teleconferencing accessory is a faceless accessory that does not have a user interface.

47. The storage device of claim 43 wherein the teleconferencing accessory located at a bottom of the ordered stack is a faceless accessory that does not have a user interface.

48. The storage device of claim 43 having further instructions which when executed cause the processor to perform further operations comprising:
establishing a conference component located below the accessory stack layer, the conference component adapted to maintain bi-directional communications between the teleconferencing application and at least one remote teleconferencing application on at least one remote system.

49. The storage device of claim 48, wherein the teleconferencing application initializes itself with the conference component by an application programming interface call passed through the teleconferencing accessories in the accessory stack layer, wherein each of the teleconferencing accessories adds its capabilities to the application programming interface call prior to passing the call to a next teleconferencing accessory in the ordered stack, such that the conference component receives the capabilities of all of the teleconferencing accessories in the accessory stack layer.

50. The storage device of claim 49, wherein each teleconferencing accessory flags its capabilities to indicate at least its desirability.

51. The storage device of claim 50, wherein the desirability is one of a group consisting of: optional, required, and desired.